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REMARKS

The claims as now amended are believed to define the patentable differences recognized in the personal conference of May 23, 2002 and as set forth in the Amendment mailed on May 29, 2002.

It is also respectfully requested that U.S. Patent Nos. 3,999,939; 4,013,407; 4,923,848; and 5,486,500 brought to the applicant's representatives' attention by Examiner Morris in the personal interview of May 23, 2002 be made of record in the above application.

It is respectfully submitted that the above application is in condition for allowance. Especially in light of the Examiner's comments in the personal interview that the exhibits left in the personal interview clearly were patentably distinct from the cited prior art and that there should be no need for the applicant to file a continuation application, it is respectfully requested that the Examiners contact the undersigned so that any obstacles to allowance can be mutually resolved.

Favorable consideration and allowance are respectfully requested.

Respectfully submitted,

Stephen Robert Carkeek

Dated: September 20, 2002

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## VERSION MARKED TO SHOW CHANGES

## IN THE SPECIFICATION

Pages 1-7 of the originally filed application have been amended as follows:

## TABLE OR COUNTER MAT

**Technical Field**

This invention relates to a table or counter mat that lies flat and is readily laundered. The invention is particularly related to a device to protect and provide a functional non-slip absorbent and message communication covering for hospitality bar tops although the invention is not limited to such use.

**Background Art**

The product used by the hospitality industry, including hotels, clubs and restaurants, for absorbing [spilt] liquids spilled on bar tops is generally in the form of strips of cotton towelling.

Problems experienced by hotel operators with the towelling product is that it slips on the work surface. It also wrinkles, bunches up in an unsightly appearance and [it] presents an unstable surface where glasses may topple over, spilling the contents. Towelling tends to lose [colour] color and shrink in the washing process, further detracting from its appearance and presentation of the bar.

In addition, when the towelling product carries a printed brand message, there is a loss of [colour] color, shrinkage and creasing which greatly detracts from the brand image and diminishes the investment value for the brand owner.

It is also known to have floor mats which may have a rubber backing and a top tufted pile of some 2 or more [centimetres] centimeters or alternatively a plurality of upwardly extending rubber fingers. However, such articles are used as floor mats with the upper layer having a physical mode of operation of brushing dirt, [or] mud or the like from soles of shoes and allowing the residue dirt to fall within the spaces between the fingers or tufts of carpet. In essence, such a structure is like a form of an upturned brush, [and] is not liquid absorbent [or providing] and does not provide a stable surface. Such an article is therefore not practical or useable as table or counter mats.

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**DISCLOSURE OF INVENTION**

It is an object of the invention to provide a table or counter mat that overcomes one or more of the disadvantages of the prior art.

In accordance with the invention, there is provided a table or counter mat having a composite sheet structure comprising a non-slip backing layer; a top liquid absorbent textile surface for resting cups, mugs or glasses; and an intermediate **[stabilisation] stabilization** layer joining the backing layer to the textile surface wherein the resultant mat is absorbent and readily able to be laundered. The non-slip backing layer can be formed from rubber such as a nitrile rubber of less than 2 mm thick with a density of about 1000 grams per square **[metre] meter**. The intermediate **[stabilisation] stabilization** layer can comprise a heat curable material **such as** non-woven polyester curable at temperatures greater than 100°C and preferably at about 170°C and wherein the mat is able to be laundered in hot water.

The textile surface of the table or counter mat can include a textile marking providing a print or advertising message viewable from above. This can be formed by a sublimation textile printing process as will be further detailed hereinafter. Preferably, the sublimation printing occurs at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.

The top liquid absorbent textile surface can be formed from a polyester surface with a pile height substantially in the range of 3 to 7 **[millimetres] millimeters**. Another embodiment has the top liquid absorbent textile surface formed from a tufted nylon cut pile surface with a pile height substantially in the range of 5 to 10 **[millimetres] millimeters**. However, this textile surface receives its **[colour] color** marking by an acid dye process.

The invention also provides a method of forming a table or counter mat including the steps of forming a nitrile rubber sheet material as a backing layer; forming an intermediate layer of non-woven polyester fabric; forming a textile surface layer to form an upper layer; aligning all three layers and compressing the layed up materials by a heated platen for **[a] selected time duration, pressure and temperature settings to cure and bond the nitrile rubber backing to the intermediate layer and the upper textile layer**; wherein the resultant table or counter mat lays flat and is able to stably support a glass or other similar liquid vessel, with the table or counter mat **being** liquid absorbent to absorb any spilled liquid.

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The step of the curing and bonding of the nitrile rubber backing to the intermediate layer and upper textile layer occurs preferably at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.

The step of providing a sublimation printing process can be by [using] placing a screen printed or digital image print paper which carries the required design [and placing] on the upper textile layer surface of the bar runner blank with print face down and activating a heat platen to press the screen [print] printed or digital image [print] printed paper to the textile surface under a selected heat, pressure and time duration. Preferably, both the curing and bonding of the nitrile rubber backing to the intermediate layer and the upper textile layer occurs at greater than 100°C and preferably greater than 170°C and the sublimation printing occurs at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.

#### **BRIEF DESCRIPTION OF THE DRAWINGS**

In order that the invention is more readily understood, a particular embodiment thereof will now be described by way of example only with reference to the accompanying drawings wherein:

Figure 1 is a perspective view of a table or counter mat according to a first embodiment of the invention.

Figure 2 is a diagrammatic exploded constructional view of the table or counter mat of Figure 1.

#### **BEST MODE FOR CARRYING OUT THE INVENTION**

Referring to Figure 1, it can be seen that the table or counter mat of the invention can be a non-slip, loose lay bar runner comprising a rectangular strip of nitrile rubber backing, heat cured and [moulded] molded to a tufted cut pile textile fabric dyed to a plain [colour] color or a printed design.

Referring to Figure 2, it can be seen that the table or counter mat of the invention comprises three construction layers which are heat pressed and [moulded] molded together to form a homogeneous product for dimensional stability and to withstand [a] frequent laundry process.

The top layer 1 is a textile surface which in one embodiment is a tufted synthetic yarn cut pile surface with a pile height of 6 mm, and pile weight of 620 grams per square meter, cut to a size blank required, generally 250 x 900 mm, but not limited to this size.

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The intermediate layer 2 is a spun bonded polyester non-woven primary fabric layer, 110 grams per square meter, providing added stability and pile carrier.

The backing layer 3 is a nitrile rubber compound backing material, 1 mm thickness, 1000 grams per square meter.

The textile [surface] layer 1 can be marked such as by sublimation printing so as to provide a message or logo viewable from the top surface 4 of the textile [surface] layer 1. [Cut] The cut pile surface is dyed to plain [colours] colors as required, or is printed with designs by a heat transfer textile primary process.

#### Raw Material Contents

Looking at the composition in more detail, the backing layer 3 comprises F2224 – nitrile rubber compound applied as the product back support with 1 mm thickness of density 1000 grams per square [metre] meter. It is composed of mineral filler with carbon black reinforcing. Zinc oxide and stearic acid activation together with ester plasticisation are used as understood in the field. Phenolic derived antidegradants are used. Also, organic accelerators in combination with sulphur allow for conventional curing. Miscellaneous additives including resins and activators can be included.

The nitrile rubber backing layer 3 provides a [non slip] non-slip surface. The thickness of the backing layer 3 aids the stability while still allowing ready laundering.

The primary supporting intermediate layer 2 comprises 100% [Polyester] polyester thermally bonded non-woven fabric with a weight density of 110 [gram] grams per [m<sup>2</sup>] square meter and tensile strength of 190 Newtons per 5 cm providing maximum elongation of +30% and tear strength of [140N] 140 Newtons. Particular advantageous characteristics are dimensionally stable, high thermal stability, reduced flammability and [ensures] insures that the product always lays flat.

With the top textile surface, there is a choice of:

- a) Polyester [fibre] fiber needlefelt, polyester scrim supported, high density heavy duty needled 500 grams per [metre<sup>2</sup>] square meter, heat set, and laser cut to required size. This product is the preferred textile surface for brand message printing, offering print clarity and [colour] color fastness to I.S.O., British and Australian standards.

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b) Tufted polyester cut pile surface with a pile height of 5-6 mm, pile weight of 600-620 grams per [metre<sup>2</sup>] square meter, knife cut to required size. This surface is suitable for brand message printing, [colour] color fast to I.S.O., British and Australian standards.

c) Tufted nylon cut pile surface, with a pile height of 5-6 mm, pile weight of 600 grams per [metre<sup>2</sup>] square meter, which can be knife cut to required size. This surface is suitable for acid dye for solid plain [colours] colors, which are [colour] color fast to I.S.O., British and Australian standards.

### Manufacturing Process

Selected textile surface 1 is laser cut in the case of needlefelt material, or knife cut in the case of tufted polyester or nylon surface material to the required blank shape and size, generally 250 x 900 mm, but not limited to this size. The blanks are stored on a holding table behind the rubber process line for the operator to lay up.

Uncured nitrile rubber is cut into required length strips from a continuous roll as received from the rubber supplier. The nitrile rubber strips are laid in parallel across the width of a Teflon™ continuous carrier belt on the rubber process line. The selected textile blank and the primary support layer are laid in position onto the uncured nitrile rubber to allow for a minimum of a 2 cm border of the rubber to be visible on either side of the textile blank. Product identification labels are positioned beneath the rubber on the Teflon™ belt to be cured to the back of each product.

The layed up batch of uncured nitrile rubber and textile blanks are advanced on the belt into the heat zone of the press over a heated platen. A press head is activated to compress the layed up materials to the heated platen for [a] selected time duration, pressure and temperature settings to cure and bond the nitrile rubber backing to the primary carrier and textile top. Settings applied to cure and bond a 1 mm thick nitrile rubber compound to the textile material are 170°C for three minutes at 75 pounds per square inch. Following the selected time duration, the press head raises[,] and releases the cured materials, [for] and the belt drive [to advance ] advances clear of the heated platen area[,] and drawing in the following uncured layed up materials for the cure process to recur. This process is repeated continuously for each layed up batch of materials.

Once the materials are clear of the heat press, they are cooled, taken from the carrier belt and stacked to be edge trimmed by a guillotine operator. Following the trim process, the bar runner product in its finished blank form is passed to a textile sublimation printer where the end

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finish requires a printed design on the product. In the case of a plain dyed [colour] color finish, the product is passed to the dye house to be vat dyed.

#### **Sublimation Print Process**

A computer generated design is output with film [colour] color separations, to be exposed on screens, which in turn are used to screen print sublimation dyes of the design onto transfer print papers for volume repeat prints. Short run and strike off print designs are output from the design computer to a digital image printer employing sublimation dyes for exact image transfer.

The finished nitrile rubber blank table or counter mat [are] is placed on the bed of the sublimation print machine, a screen printed or digital image [print] printed paper which carries the required design[,], is placed on the textile surface of the table or counter mat blank, dye face down. A heat platen is activated pressing the [print] printed paper to the textile surface under [a] selected heat, pressure and time duration. This process sublimates the dye turning it into a gas which is transferred into the textile [fibre] fiber, resulting in a mirror image of the screen-print design on to the textile surface of the table or counter mat.

Oil release from the press, the spent print paper is removed, leaving the finished design to be cooled and stored for packing and dispatch.

The above descriptions are of preferred embodiments of the [inventiion] invention and are [priovided] provided as illustration and not limitation of the invention. Clearly persons skilled in the art would understand variations of the described invention without any inventive step and these are included within the scope of the invention as defined in the claims.

#### **IN THE CLAIMS**

Please amend claim 1 as follows:

1. (twice amended) A table or counter mat having a composite sheet structure comprising:

a non-slip backing layer;

a top liquid absorbent textile surface [for resting cups, mugs or glasses]; and

an intermediate stabilization and pile support layer joining the backing layer to the textile surface and aiding support of the textile surface, with the textile surface having a pile height less than 7 millimeters adapted for resting cups, mugs or glasses and for retaining

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an element of absorbency, wherein the resultant mat is [absorbent and] readily able to be laundered.

Please amend claim 5 as follows:

5. (thrice amended) A table or counter mat according to claim 3 wherein the intermediate stabilization and pile support layer comprises a heat curable material curable at temperatures greater than 100°C and preferably at about 170°C such that the mat is able to be laundered in hot water.

Please amend claim 7 as follows:

7. (twice amended) A table or counter mat [according to claim 6 wherein] having a composite sheet structure comprising:  
a top textile surface layer;  
a non-slip backing layer;  
and an intermediate stabilization and support layer aiding joining and support of the top textile surface layer to the non-slip backing layer while allowing the top textile surface layer of the resultant mat to be absorbent;

the non-slip backing layer is formed from a nitrile rubber curable at temperatures greater than 100°C and preferably at about 170°C such that the mat is able to be laundered in hot water;

the intermediate stabilization and support layer is formed from a non-woven polyester, and

the top textile surface layer is a non-woven polyester [has a density of about 450 to 650 grams per square meter] with a pile height substantially in the range of 3 to 7 millimeters, with the intermediate stabilization and support layer and the top textile surface layer combined with the non-slip backing layer forming a top liquid absorbent textile of less than 4 millimeters which is continuous and consistent and maintains relative position for printing a detailed image thereon and maintaining position to display the detailed image.

Please amend claim 12 as follows:

12. (twice amended) A table or counter mat according to claim 8 wherein the top liquid absorbent textile surface is formed from a tufted nylon cut pile surface [with a pile height substantially in the range of 5 to 10 millimeters].



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Please amend claim 15 as follows:

15. (amended) A table or counter mat [according to claim 14 wherein the dye process occurs such that the mat is] readily able to be laundered [in hot water] having a composite sheet structure comprising:  
a nitrile rubber non-slip backing layer aiding the mat to lie flat;  
a top liquid absorbent polyester textile surface layer having a surface height less than 7 millimeters and preferably less than 2 millimeters to allow resting thereon of cups or glasses or the like and having a density of pile sufficient to form an absorbent layer; and  
wherein the textile surface layer is continuous and consistent so that the textile surface layer substantially maintains relative position for receiving and displaying a detailed image by a textile printing providing a print or advertising message viewable from above.

Please amend claim 16 as follows:

16. (twice amended) A method of forming a table or counter mat including:  
 a) forming a nitrile rubber sheet material as a backing layer;  
 b) [forming an intermediate layer of non-woven polyester fabric;  
 c)] forming a top textile surface layer by combining a non-woven polyester fabric with a non-woven polyester stabilization and pile support fabric [to form an upper layer];  
 and

[d)] c) aligning [all three] the top and backing layers and compressing the layered materials by a heated platen for selected time duration, pressure and temperature settings to cure and bond the nitrile rubber backing layer to the [intermediate layer and upper] top textile surface layer;

wherein the resultant table or counter mat lays flat and is able to support stably a glass or other similar liquid vessel with the table or counter mat being liquid absorbent to absorb any spilled liquid.

Please amend claim 17 as follows:

17. (amended) A method of forming a table or counter mat according to claim 16 wherein the curing and bonding of the nitrile rubber backing layer to the [intermediate layer and upper] top textile surface layer occurs at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.

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Please amend claim 18 as follows:

18. (twice amended) A method of forming a table or counter mat according to claim 16 further including:

providing a sublimation printing process by placing a screen printed or digital image printed paper which carries the required design on the [upper] top textile [layer] surface layer [of the bar runner blank] with print face down and activating a heat platen to press the screen printed or digital image printed paper to the top textile surface layer under a selected heat, pressure and time duration.

Please amend claim 19 as follows:

19. (amended) A method of forming a table or counter mat [according to claim 18] including:

a) forming a nitrile rubber sheet material as a backing layer;

b) forming a top textile surface layer which is non-tufted and is continuous and has a density and a pile height substantially in the range of 3 to 7 millimetres able to be printed thereon by sublimation printing;

c) aligning the top and backing layers;

d) compressing the aligned materials by a heated platen for a selected time duration, pressure and temperature settings to cure and bond the nitrile rubber backing to the top textile layer so that the resultant table or counter mat lays flat and is able to support stably a glass or other similar liquid vessel and the table or counter mat is liquid absorbent to absorb any spilled liquid;

wherein the curing and bonding of the nitrile rubber backing to the [intermediate layer and upper] top textile surface layer occurs at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water;

e) placing a screen printed, offset or digital image print paper which carries a detailed image on the top textile layer surface of the bonded resultant table or counter mat with print face down; and

f) activating a heat platen to press the screen printed, offset or digital image print paper to the top textile surface layer under selected heat, pressure and time duration and [the sublimation printing occurs] at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water, with the top supported textile surface

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layer bonded with the backing layer forming a top liquid absorbent textile of less than 4 millimeters which is continuous and consistent and maintains relative position for printing the detailed image thereon and maintaining position to display the detailed image.

IN THE ABSTRACT

Page 11 of the originally filed application has been amended as follows:

ABSTRACT

A table or counter mat having a composite sheet structure [comprising] includes a non-slip backing layer 3; a top liquid absorbent textile surface 1 for resting cups, mugs or glasses; and an intermediate [stabilisation] stabilization layer 2 joining the backing layer 3 to the textile surface 1 wherein the resultant mat is absorbent and readily able to be laundered. The invention also provides a method of forming the table or counter mat by curing and bonding of the nitrile rubber backing layer 3 to the intermediate layer 2 and upper polyester textile layer 1 at greater than 100°C and preferably greater than 170°C. [and a sublimation] Sublimation printing [4 for printing] on the textile layer 1 occurs at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.

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**TABLE OR COUNTER MAT****Technical Field**

This invention relates to a table or counter mat that lies flat and is readily laundered. The invention is particularly related to a device to protect and provide a functional non-slip absorbent  
5 and message communication covering for hospitality bar tops although the invention is not limited to such use.

**Background Art**

The product used by the hospitality industry, including hotels, clubs and restaurants, for absorbing liquids spilled on bar tops is generally in the form of strips of cotton towelling.

10 Problems experienced by hotel operators with the towelling product is that it slips on the work surface. It also wrinkles, bunches up in an unsightly appearance and presents an unstable surface where glasses may topple over, spilling the contents. Towelling tends to lose color and shrink in the washing process, further detracting from its appearance and presentation of the bar.

In addition, when the towelling product carries a printed brand message, there is a loss of  
15 color, shrinkage and creasing which greatly detracts from the brand image and diminishes the investment value for the brand owner.

It is also known to have floor mats which may have a rubber backing and a top tufted pile of some 2 or more centimeters or alternatively a plurality of upwardly extending rubber fingers. However, such articles are used as floor mats with the upper layer having a physical mode of  
20 operation of brushing dirt, mud or the like from soles of shoes and allowing the residue dirt to fall within the spaces between the fingers or tufts of carpet. In essence, such a structure is like a form of an upturned brush, is not liquid absorbent and does not provide a stable surface. Such an article is therefore not practical or useable as table or counter mats.

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## DISCLOSURE OF INVENTION

It is an object of the invention to provide a table or counter mat that overcomes one or more of the disadvantages of the prior art.

In accordance with the invention, there is provided a table or counter mat having a  
5 composite sheet structure comprising a non-slip backing layer; a top liquid absorbent textile surface for resting cups, mugs or glasses; and an intermediate stabilization layer joining the backing layer to the textile surface wherein the resultant mat is absorbent and readily able to be laundered. The non-slip backing layer can be formed from rubber such as a nitrile rubber of less than 2 mm thick with a density of about 1000 grams per square meter. The intermediate  
10 stabilization layer can comprise a heat curable material such as non-woven polyester curable at temperatures greater than 100°C and preferably at about 170°C and wherein the mat is able to be laundered in hot water.

The textile surface of the table or counter mat can include a textile marking providing a print or advertising message viewable from above. This can be formed by a sublimation textile  
15 printing process as will be further detailed hereinafter. Preferably, the sublimation printing occurs at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.

The top liquid absorbent textile surface can be formed from a polyester surface with a pile height substantially in the range of 3 to 7 millimeters. Another embodiment has the top  
20 liquid absorbent textile surface formed from a tufted nylon cut pile surface with a pile height substantially in the range of 5 to 10 millimeters. However, this textile surface receives its color marking by an acid dye process.

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The invention also provides a method of forming a table or counter mat including the steps of forming a nitrile rubber sheet material as a backing layer; forming an intermediate layer of non-woven polyester fabric; forming a textile surface layer to form an upper layer; aligning all three layers and compressing the layed up materials by a heated platen for selected time duration,  
5 pressure and temperature settings to cure and bond the nitrile rubber backing to the intermediate layer and the upper textile layer; wherein the resultant table or counter mat lays flat and is able to stably support a glass or other similar liquid vessel, with the table or counter mat being liquid absorbent to absorb any spilled liquid.

The step of the curing and bonding of the nitrile rubber backing to the intermediate layer  
10 and upper textile layer occurs preferably at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.

The step of providing a sublimation printing process can be by placing a screen printed or digital image print paper which carries the required design on the upper textile layer surface of the bar runner blank with print face down and activating a heat platen to press the screen printed  
15 or digital image printed paper to the textile surface under a selected heat, pressure and time duration. Preferably, both the curing and bonding of the nitrile rubber backing to the intermediate layer and the upper textile layer occurs at greater than 100°C and preferably greater than 170°C and the sublimation printing occurs at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.

## 20 BRIEF DESCRIPTION OF THE DRAWINGS

In order that the invention is more readily understood, a particular embodiment thereof will now be described by way of example only with reference to the accompanying drawings wherein:

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Figure 1 is a perspective view of a table or counter mat according to a first embodiment of the invention.

Figure 2 is a diagrammatic exploded constructional view of the table or counter mat of Figure 1.

## 5 BEST MODE FOR CARRYING OUT THE INVENTION

Referring to Figure 1, it can be seen that the table or counter mat of the invention can be a non-slip, loose lay bar runner comprising a rectangular strip of nitrile rubber backing, heat cured and molded to a tufted cut pile textile fabric dyed to a plain color or a printed design.

Referring to Figure 2, it can be seen that the table or counter mat of the invention  
10 comprises three construction layers which are heat pressed and molded together to form a homogeneous product for dimensional stability and to withstand frequent laundry process.

The top layer 1 is a textile surface which in one embodiment is a tufted synthetic yarn cut pile surface with a pile height of 6 mm, and pile weight of 620 grams per square meter, cut to a size blank required, generally 250 x 900 mm, but not limited to this size.

15 The intermediate layer 2 is a spun bonded polyester non-woven primary fabric layer, 110 grams per square meter, providing added stability and pile carrier.

The backing layer 3 is a nitrile rubber compound backing material, 1 mm thickness, 1000 grams per square meter.

The textile layer 1 can be marked such as by sublimation printing so as to provide a  
20 message or logo viewable from the top surface 4 of the textile layer 1. The cut pile surface is dyed to plain colors as required, or is printed with designs by a heat transfer textile primary process.

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### Raw Material Contents

Looking at the composition in more detail, the backing layer 3 comprises F2224 – nitrile rubber compound applied as the product back support with 1 mm thickness of density 1000 grams per square meter. It is composed of mineral filler with carbon black reinforcing. Zinc oxide and stearic acid activation together with ester plasticisation are used as understood in the field. Phenolic derived antidegradants are used. Also, organic accelerators in combination with sulphur allow for conventional curing. Miscellaneous additives including resins and activators can be included.

The nitrile rubber backing layer 3 provides a non-slip surface. The thickness of the backing layer 3 aids the stability while still allowing ready laundering.

The primary supporting intermediate layer 2 comprises 100% polyester thermally bonded non-woven fabric with a weight density of 110 grams per square meter and tensile strength of 190 Newtons per 5 cm providing maximum elongation of +30% and tear strength of 140 Newtons. Particular advantageous characteristics are dimensionally stable, high thermal stability, reduced flammability and insures that the product always lays flat.

With the top textile surface, there is a choice of:

a) Polyester fiber needlefelt, polyester scrim supported, high density heavy duty needled 500 grams per square meter, heat set, and laser cut to required size. This product is the preferred textile surface for brand message printing, offering print clarity and color fastness to I.S.O., British and Australian standards.

b) Tufted polyester cut pile surface with a pile height of 5-6 mm, pile weight of 600-620 grams per square meter, knife cut to required size. This surface is suitable for brand message printing, color fast to I.S.O., British and Australian standards.



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c) Tufted nylon cut pile surface, with a pile height of 5-6 mm, pile weight of 600 grams per square meter, which can be knife cut to required size. This surface is suitable for acid dye for solid plain colors, which are color fast to I.S.O., British and Australian standards.

### Manufacturing Process

5 Selected textile surface 1 is laser cut in the case of needlefelt material, or knife cut in the case of tufted polyester or nylon surface material to the required blank shape and size, generally 250 x 900 mm, but not limited to this size. The blanks are stored on a holding table behind the rubber process line for the operator to lay up.

Uncured nitrile rubber is cut into required length strips from a continuous roll as received  
10 from the rubber supplier. The nitrile rubber strips are laid in parallel across the width of a Teflon™ continuous carrier belt on the rubber process line. The selected textile blank and the primary support layer are laid in position onto the uncured nitrile rubber to allow for a minimum of a 2 cm border of the rubber to be visible on either side of the textile blank. Product identification labels are positioned beneath the rubber on the Teflon™ belt to be cured to the  
15 back of each product.

The layed up batch of uncured nitrile rubber and textile blanks are advanced on the belt into the heat zone of the press over a heated platen. A press head is activated to compress the layed up materials to the heated platen for selected time duration, pressure and temperature settings to cure and bond the nitrile rubber backing to the primary carrier and textile top. Settings  
20 applied to cure and bond a 1 mm thick nitrile rubber compound to the textile material are 170°C for three minutes at 75 pounds per square inch. Following the selected time duration, the press head raises and releases the cured materials, and the belt drive advances clear of the heated

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platen area and drawing in the following uncured layed up materials for the cure process to recur.

This process is repeated continuously for each layed up batch of materials.

Once the materials are clear of the heat press, they are cooled, taken from the carrier belt and stacked to be edge trimmed by a guillotine operator. Following the trim process, the bar  
5 runner product in its finished blank form is passed to a textile sublimation printer where the end finish requires a printed design on the product. In the case of a plain dyed color finish, the product is passed to the dye house to be vat dyed.

### **Sublimation Print Process**

A computer generated design is output with film color separations, to be exposed on  
10 screens, which in turn are used to screen print sublimation dyes of the design onto transfer print papers for volume repeat prints. Short run and strike off print designs are output from the design computer to a digital image printer employing sublimation dyes for exact image transfer.

The finished nitrile rubber blank table or counter mat is placed on the bed of the sublimation print machine, a screen printed or digital image printed paper which carries the  
15 required design is placed on the textile surface of the table or counter mat blank, dye face down. A heat platen is activated pressing the printed paper to the textile surface under selected heat, pressure and time duration. This process sublimates the dye turning it into a gas which is transferred into the textile fiber, resulting in a mirror image of the screen-print design on to the textile surface of the table or counter mat.

20 Oil release from the press, the spent print paper is removed, leaving the finished design to be cooled and stored for packing and dispatch.

The above descriptions are of preferred embodiments of the invention and are provided as illustration and not limitation of the invention. Clearly persons skilled in the art would

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understand variations of the described invention without any inventive step and these are included within the scope of the invention as defined in the claims.

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## CLAIMS

1. (twice amended) A table or counter mat having a composite sheet structure comprising:

a non-slip backing layer;

a top liquid absorbent textile surface; and

an intermediate stabilization and pile support layer joining the backing layer to the textile surface and aiding support of the textile surface, with the textile surface having a pile height less than 7 millimeters adapted for resting cups, mugs or glasses and for retaining an element of absorbency, wherein the resultant mat is readily able to be laundered.

2. A table or counter mat according to claim 1 wherein the non-slip backing layer is formed from rubber.

3. A table or counter mat according to claim 2 wherein the non-slip backing layer is formed from a nitrile rubber.

4. (amended) A table or counter mat according to claim 3 wherein the nitrile rubber is in the range of less than 2 mm thick with a density of about 1000 grams per square meter.

5. (thrice amended) A table or counter mat according to claim 3 wherein the intermediate stabilization and pile support layer comprises a heat curable material curable at temperatures greater than 100°C and preferably at about 170°C such that the mat is able to be laundered in hot water.

6. A table or counter mat according to claim 5 wherein the intermediate layer is formed from a non-woven polyester.

7. (twice amended) A table or counter mat having a composite sheet structure comprising:

a top textile surface layer;

a non-slip backing layer;

and an intermediate stabilization and support layer aiding joining and support of the top textile surface layer to the non-slip backing layer while allowing the top textile surface layer of the resultant mat to be absorbent;

the non-slip backing layer is formed from a nitrile rubber curable at temperatures greater

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the intermediate stabilization and support layer is formed from a non-woven polyester, and

the top textile surface layer is a non-woven polyester with a pile height substantially in the range of 3 to 7 millimeters, with the intermediate stabilization and support layer and the top textile surface layer combined with the non-slip backing layer forming a top liquid absorbent textile of less than 4 millimeters which is continuous and consistent and maintains relative position for printing a detailed image thereon and maintaining position to display the detailed image.

8. (amended) A table or counter mat according to claim 5 wherein the textile surface includes a textile marking providing a coloring, a print or an advertising message viewable from above.

9. A table or counter mat according to claim 8 wherein the textile marking is formed by a sublimation textile printing process.

10. A table or counter mat according to claim 9 wherein the sublimation printing occurs at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.

11. (amended) A table or counter mat according to claim 10 wherein the top liquid absorbent textile surface is formed from a polyester surface with a pile height substantially in the range of 3 to 7 millimeters.

12. (twice amended) A table or counter mat according to claim 8 wherein the top liquid absorbent textile surface is formed from a tufted nylon cut pile surface.

13. (amended) A table or counter mat according to claim 12 wherein the textile surface has a density of about 600 grams per square meter.

14. A table or counter mat according to claim 13 wherein the textile marking is formed by an acid dye process.

15. (amended) A table or counter mat readily able to be laundered having a composite sheet structure comprising:

a nitrile rubber non-slip backing layer aiding the mat to lie flat;

a top liquid absorbent polyester textile surface layer having a surface height less than 7 millimeters and preferably less than 2 millimeters to allow resting thereon of cups or glasses or the like and having a density of pile sufficient to form an absorbent layer; and

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wherein the textile surface layer is continuous and consistent so that the textile surface layer substantially maintains relative position for receiving and displaying a detailed image by a textile printing providing a print or advertising message viewable from above.

16. (twice amended) A method of forming a table or counter mat including:

- a) forming a nitrile rubber sheet material as a backing layer;
- b) forming a top textile surface layer by combining a non-woven polyester fabric with a non-woven polyester stabilization and pile support fabric; and
- c) aligning the top and backing layers and compressing the layered materials by a heated platen for selected time duration, pressure and temperature settings to cure and bond the nitrile rubber backing layer to the top textile surface layer;

wherein the resultant table or counter mat lays flat and is able to support stably a glass or other similar liquid vessel with the table or counter mat being liquid absorbent to absorb any spilled liquid.

17. (amended) A method of forming a table or counter mat according to claim 16 wherein the curing and bonding of the nitrile rubber backing layer to the top textile surface layer occurs at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.

18. (twice amended) A method of forming a table or counter mat according to claim 16 further including:

providing a sublimation printing process by placing a screen printed or digital image printed paper which carries the required design on the top textile surface layer with print face down and activating a heat platen to press the screen printed or digital image printed paper to the top textile surface layer under a selected heat, pressure and time duration.

19. (amended) A method of forming a table or counter mat including:

- a) forming a nitrile rubber sheet material as a backing layer;
- b) forming a top textile surface layer which is non-tufted and is continuous and has a density and a pile height substantially in the range of 3 to 7 millimetres able to be printed thereon by sublimation printing;
- c) aligning the top and backing layers;
- d) compressing the aligned materials by a heated platen for a selected time duration, pressure and temperature settings to cure and bond the nitrile rubber backing to the top textile

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layer so that the resultant table or counter mat lays flat and is able to support stably a glass or other similar liquid vessel and the table or counter mat is liquid absorbent to absorb any spilled liquid;

wherein the curing and bonding of the nitrile rubber backing to the top textile surface layer occurs at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water;

e) placing a screen printed, offset or digital image print paper which carries a detailed image on the top textile layer surface of the bonded resultant table or counter mat with print face down; and

f) activating a heat platen to press the screen printed, offset or digital image print paper to the top textile surface layer under selected heat, pressure and time duration and at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water, with the top supported textile surface layer bonded with the backing layer forming a top liquid absorbent textile of less than 4 millimeters which is continuous and consistent and maintains relative position for printing the detailed image thereon and maintaining position to display the detailed image.

20. A method of forming a table or counter mat according to claim 19 with the top textile surface layer formed by a non-woven non tufted polyester and an intermediate layer of a non-woven polyester.

21. A table or counter mat having a composite sheet structure comprising:

a top textile surface layer;

a non-slip backing layer;

and an intermediate stabilization and support layer aiding joining and support of the top textile surface layer to the non-slip backing layer while allowing the top textile surface layer of the resultant mat to be absorbent;

the non-slip backing layer is formed from a nitrile rubber in the range of less than 2 mm thick with a density of about 1000 -1200 grams per square meter and curable at temperatures greater than 100°C such that the mat is able to be laundered in hot water;

the intermediate stabilization and support layer and the top textile surface layer are a knitted polyester fabric which when the intermediate stabilization and support layer and the top textile surface layer are combined with the non-slip backing layer forms a top liquid absorbent

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textile of less than 4 millimeters which is continuous and consistent and maintains relative position for printing a detailed image thereon and maintaining position to display the detailed image.

22. The mat according to claim 21 with the non-slip backing layer being curable at temperatures greater than 170°C.

23. A table or counter mat having a composite sheet structure comprising:

a top fabric layer;

a non-slip backing layer;

a part of the top fabric layer able to be joined to the non-slip backing layer while allowing the top fabric layer of the resultant mat to be absorbent;

the non-slip backing layer is formed from a nitrile rubber in the range of less than 2 mm thick with a density of about 1000 -1200 grams per square meter and curable at temperatures greater than 100°C such that the mat is able to be laundered in hot water;

the top fabric layer being a knitted polyester fabric which when combined with the non-slip backing layer forms a top liquid absorbent textile of less than 4 millimetres which is continuous and consistent and maintains relative position for printing a detailed image thereon and maintaining position to display the detailed image.

24. The mat according to claim 23 with the non-slip backing layer being curable at temperatures greater than 170°C.

25. The mat according to claim 24, wherein the top fabric layer includes a microknitted polyester fabric.

26. The mat according to claim 24, wherein the top fabric layer includes a warp-knitted plush polyester fabric.

27. The mat according to claim 24, wherein the mat has an absorbency of at least 15 ml before overflow for a 10 cm times 10 cm sample.

28. A table or counter mat comprising, in combination: a non-slip backing layer; and a top liquid absorbent polyester textile layer joined to the non-slip backing layer to form a composite sheet structure which is readily able to be laundered, with the top liquid absorbent textile layer having a density of about 200 to 600 grams per square meter to stably support cups,



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mugs or glasses, to absorb any spilled liquid from the cups, mugs or glasses supported thereon, and to provide a message communication covering with clarity.

29. The table or counter mat according to claim 28 with the non-slip backing layer having a thickness, with the top liquid absorbent textile layer having a height, with a ratio of the height of the top liquid absorbent textile layer to the thickness of the non-slip backing layer being about 10 to 1.

30. The table or counter mat according to claim 29 with the thickness of the non-slip backing layer being less than about 2 mm.

31. The table or counter mat according to claim 30 with the top liquid absorbent textile layer being a tufted synthetic yarn cut pile surface with a pile height of about 6 mm and a pile weight of about 600-620 grams per square meter.

32. The table or counter mat according to claim 31 with the thickness of the non-slip backing layer being about 1 mm.

33. The table or counter mat according to claim 32 with the non-slip backing layer is formed from rubber having a density of about 1000 grams per square meter.

34. The table or counter mat according to claim 33 further comprising, in combination: an intermediate stabilization layer joining the non-slip backing layer to the top liquid absorbent textile layer.

35. The table or counter mat according to claim 34 with the intermediate stabilization layer formed of synthetic thermally bonded non-woven fabric.

36. The table or counter mat according to claim 35 with the intermediate stabilization layer having a density of 110 grams per square meter and a tensile strength of 190 Newtons per 5 cm with a maximum elongation of plus 30% and a tear strength of 140 Newtons, with the

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intermediate stabilization layer formed of a material curable at temperatures greater than 100°C such that the composite sheet structure can be laundered in hot water.

37. The table or counter mat according to claim 28 with the top liquid absorbent textile layer being a tufted synthetic yarn cut pile surface with a pile height of about 6 mm and a pile weight of about 600-620 grams per square meter.

38. The table or counter mat according to claim 30 with the top liquid absorbent textile layer being a synthetic, scrim supported, fiber needlefelt having a density of about 500 grams per square meter.

39. The table or counter mat according to claim 38 with the thickness of the non-slip backing layer being about 1 mm.

40. The table or counter mat according to claim 39 with the non-slip backing layer having a density of 1000 grams per square meter.

41. The table or counter mat according to claim 28 with the thickness of the non-slip backing layer being about 1 mm.

42. A table or counter mat comprising, in combination: a non-slip backing layer; and a top liquid absorbent textile layer joined to the non-slip backing layer to form a composite sheet structure, with the top layer absorbent textile layer having a height, with the non-slip backing layer having a thickness, with a ratio of the height of the top liquid absorbent textile layer to the thickness of the non-slip backing layer being about 1 to 1.

43. The table or counter mat according to claim 42 with the thickness of the non-slip backing layer being less than about 2 mm.

44. The table or counter mat according to claim 42 with the thickness of the non-slip backing layer being about 1 mm.

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45. The table or counter mat according to claim 44 with the top liquid absorbent textile layer being a surface with a pile height of about 2 mm.

46. A table or counter mat according to claim 44 with the top liquid absorbent textile layer formed from a polyester surface with a pile height substantially in the range of 3 to 7 millimeters.

47. A table or counter mat comprising, in combination: a non-slip backing layer; and a top layer joined to the non-slip backing layer to form a composite sheet for resting cups, mugs or glasses on the top layer, with the top layer consisting of synthetic textile surface of a high density capable of stably supporting such cups, mugs or glasses resting on the top layer and being liquid absorbent to absorb any liquid spilled from such cups, mugs or glasses resting on the top layer.

48. The table or counter mat according to claim 47 with the high density being about 200 to 600 grams per square meter.

49. The table or counter mat according to claim 47 with the thickness of the non-slip backing layer being less than about 2 mm.

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# ABSTRACT

A table or counter mat having a composite sheet structure includes a non-slip backing layer 3; a top liquid absorbent textile surface 1 for resting cups, mugs or glasses; and an intermediate stabilization layer 2 joining the backing layer 3 to the textile surface 1 wherein the resultant mat is absorbent and readily able to be laundered. The invention also provides a method of forming the table or counter mat by curing and bonding of the nitrile rubber backing layer 3 to the intermediate layer 2 and upper polyester textile layer 1 at greater than 100°C and preferably greater than 170°C. Sublimation printing on the textile layer 1 occurs at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.